

Abstract

Purpose

To provide a biomass gasification system and operating method capable of maintaining an effective seal between the respective internal environments of a gasification furnace and thermal source, and of providing a stable supply of slag from the gasification furnace to the thermal source through a slag feed system.

Means

A biomass gasification system, which generates fuel gas from the thermal treatment of biomass in a gasification furnace 2 thermally powered by a thermal airflow generator 1, incorporates a slag feed system 3 which supplies slag S generated in the gasification furnace to the thermal airflow generator for use as combustible fuel therein. A vertical hopper 4 is installed to the slag feed system for accumulating the slag in order to provide a sealing function which separates and seals the respective internal environments of the gasification furnace and thermal airflow generator. A detective means is provided in the form of electrodes 9, 10 and 11 which are used to monitor the amount of slag in the vertical hopper by contacting the slag to establish conductivity in the electrode circuit.